

Guidance document for Mercury Handling 2005

State Sustainability Committee on Mercury and other Toxics



This document serves as an update and a complement to the 'Mercury reduction Statewide Strategies' and 'Action steps' in the State Sustainability 'Agency Sustainability Planning and Implementation Guide', which remains available on the web at: <http://www.mass.gov/envir/Sustainable/>. We encourage all agencies to conduct a mercury inventory of your facilities and label known mercury containing equipment to ensure appropriate handling in future.

Fluorescent Light Bulbs:

Use of fluorescent light bulbs is highly recommended over incandescent bulbs for almost all lighting because fluorescent lights use significantly less energy for the same light output, and last much longer, reducing time and cost of maintenance.

However, all of the fluorescent bulbs available now (including both tube and compact styles) contain some mercury. When in use and intact, these bulbs do not pose a risk of mercury exposure or release. However, these mercury-containing devices must be handled carefully, and can, and should, be recycled. Most fluorescent bulbs are considered a Universal Waste and it is against the law to dispose of many of them as regular solid waste (trash). Moreover, even the "green capped" bulbs which have a lower amount of mercury should still be recycled as this is the only way to ensure the prevention of mercury releases to air or water.

Light bulb recycling can be contracted through the **state contract FAC26**. Intact used bulbs should be stored in the cartons they came in or in another sturdy container that will prevent the bulbs from breakage until they are picked up. The state contractors may also be able to supply storage containers. They should be stored where they will not be disturbed (broken).

The Center for Environmental Technology (CET) is a Massachusetts-based non-profit currently funded by EPA to assist municipalities, businesses and institutions. Whether you're already recycling these lamps or not, CET may be able to help you with issues such as storage and cost reduction. For more information on these services, contact CET's Lorenzo Macaluso at (413) 218-1543, or visit their web site at: http://www.cetonline.org/FarmBusiness/fluor_bulbrecycling.htm.

Broken fluorescent bulbs can release mercury and are a potential health risk. For information on handling and clean-up of broken bulbs, please read the Department of Environmental Protection's page on mercury in lightbulbs at: <http://www.mass.gov/dep/files/flampbiz.htm>.

Thermostats:

Many thermostats use mercury to make the electrical contacts, and they may contain up to three grams. If your thermostat does not have a digital display, you should assume it contains mercury, or consult the user manual (often available on

the manufacturer's website). The mercury in these devices is well contained and does not pose a risk of release under normal use or handling. These devices can be used safely until they are replaced for other reasons, such as replacement with a programmable electronic thermostat or during remodeling or demolition.

When a mercury containing thermostat is removed, it should be recycled to prevent release of the mercury to the environment from a landfill or incinerator. For information on recycling programs contact the Thermostat Recycling Corporation (TRC) at 1-800-238-8192 or check www.nema.org/government/environment. The Board of Health or Department of Public Works of the town in which the facility is located may have a mercury collection program you can use as well.

It is understood that most remodeling projects undertaken by state agencies will be conducted via a contractor. If at all possible, make sure that contractors used for remodeling or demolition work are in the TRC program so that they will be able to handle your thermostats appropriately. This requirement can be made a part of the contract or contractor selection process.

Healthcare Settings:

There are many devices in hospitals and other health care settings that may contain mercury. In addition, certain chemicals including vaccines, laboratory reagents, and many brands of bleach contain mercury. There are alternatives for many of the commonly-used items such as Thermometers and blood pressure Sphygmomanometers, and chemicals that can be substituted and provide equivalent or better performance.

For more information on the complex issues involved in a medical setting, visit the Healthcare Without Harm mercury page at <http://www.noharm.org/mercury/issue>, and the Northeast Waste Management Officials' Association (NEWMOA) mercury-added products database at: <http://www.newmoa.org/Newmoa/htdocs/prevention/mercury/imerc/notification/index.cfm>.

As a subset of healthcare and medical setting, dental services have the specific mercury-related issue of dental amalgam. The Department of Environmental Protection is promulgating new regulations which will require the use of amalgam separating equipment. This is an expansion of an ongoing voluntary program, and all dentists are encouraged to enroll in the voluntary program now to defer permitting costs and achieve earlier environmental improvement. For more information on this program, visit <http://www.mass.gov/dep/erp/dentists.htm>.

Vehicles:

Many vehicles, particularly those manufactured prior to 2002, contain mercury-added switches for the lights in the trunk or hood. These switches can be removed and replaced with non-mercury alternatives; additional information is available at: <http://www.epa.gov/region5/air/mercury/autoswitch.htm>, <http://www.epa.gov/glnpo/bnsdocs/hgsbook/auto.pdf> or http://www.cleanairfoundation.org/switch_out/html/e_switchout_hgvehicles.asp.

If a vehicle is being sent for scrap and demolition, these switches should be removed to ensure that the mercury is not released when the vehicle is crushed.

Heating, Cooling, and Cooking Equipment:

Mercury is used in a variety of equipment used for heating, cooling, pumping, cooking, laundry and similar applications. The mercury makes up part of a switch, temperature sensor, or metering device. The amount of mercury can vary from a few grams in a kitchen stove flame sensor to a kilogram or more in a large boiler complex. The mercury in these applications is typically both integrated into the equipment and well contained and the mercury is unlikely to be released during normal use.

Those items which may contain mercury should be identified in your facility in order to ensure appropriate handling during remodeling or in case of equipment damage or a facility emergency. The NEWMOA IMERC database listed under "healthcare settings" has many of these products listed. The manuals and equipment specifications for large or specially designed equipment can also help determine if any contain mercury, how much, and where it is located.

An inventory of equipment with mercury should be kept at the facility, and kept up to date. In addition, items with large amounts of mercury can be labeled. The label should clearly state that the equipment contains mercury and give instructions on who to contact in case of damage or if the equipment needs to be removed.

When purchasing new items for heating, cooling and other applications, determine whether any of the alternatives are mercury-free and purchase those, if feasible. The NEWMOA IMERC database, above, is a good source of information on mercury in products. The Sustainable Hospitals website (<http://www.sustainablehospitals.org/>) has a searchable database of alternative products.

LCD (Liquid Crystal Display) computer monitors:

New computers are increasingly purchased with flat screen LCD monitors rather than bulky CRT style monitors. This has several environmental benefits as LCD Displays use less energy for the same screen size, and CRT displays used a large quantity of lead in the glass tube behind the screen. However, while LCD screens may be an improvement, they do contain mercury and should also be treated with care. Any faulty LCD monitors should be returned to the manufacturer or treated as universal waste, and physically broken displays have the potential for mercury releases, and should be handled accordingly.

Cell Phones and small electronics:

Cell phones and other small electronic devices typically contain multiple toxics including the persistent toxins: lead, mercury, cadmium, antimony, beryllium, nickel, zinc and arsenic.

Organizations such as Earthworks: <http://www.recyclemycellphone.org/> can be found that will collect and reuse old cell phones, and dispose of unusable parts appropriately. The **2003 INFORM Study "Calling all Cell Phones"** available on the State Sustainability Website, lists organizations that recycle cell phones. Since

that report, similar programs for iPods and other small electronic devices have developed. For example iPods can be recycled at apple stores:

<http://www.apple.com/pr/library/2005/jun/03recycle.html>

Batteries:

Batteries, particularly rechargeable ones are also toxic but contain valuable materials and should be recycled. Large facilities should have designated recycling boxes for old batteries, which would be collected by your universal waste contractor under the same State contract as fluorescent lights # FAC26 - Fluorescent Lamp & Ballast & Computer recycling. For smaller facilities go to

<http://www.rbrc.org/index.html> to find a battery recycling drop-off point near you.